



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/769,903

02/03/2004

Siamak Naghian

60091.00270

9185

32294

7590

05/02/2008

SQUIRE, SANDERS & DEMPSEY L.L.P.

8000 TOWERS CRESCENT DRIVE

14TH FLOOR

VIENNA, VA 22182-6212

EXAMINER

MURPHY, RHONDA L

ART UNIT

PAPER NUMBER

2616

MAIL DATE

DELIVERY MODE

05/02/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/769,903	Applicant(s) NAGHIAN ET AL.	
	Examiner RHONDA MURPHY	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-18 is/are rejected.
- 7) ☒ Claim(s) 4 and 19-21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This communication is responsive to the amendment filed on 1/30/08.

Accordingly, claims 1-21 are currently pending in this application.

Response to Arguments

1. Applicant's arguments filed 1/30/08 have been fully considered but they are not persuasive. Applicant argues Tasman fails to disclose "assembling data units of at least one incoming data stream into an output data stream, wherein the data units are destined for at least one destination node, and the output stream comprises a service level requirement for each of the at least one destination node." However, Examiner respectfully disagrees and would like to direct the Applicant to the rejection below, including Tasman's paragraph 46 and Kadambi column 4, lines 38-40. Tasman discloses receiving packets via transceiver 6, maintaining a set of link "trace records" to record information regarding transmissions over a communication channel (service level requirements)...provide specific capabilities (e.g. radio characteristics, parameters, etc) in trace records. As disclosed in paragraph 54, the data units are destined for at least one destination node (destination address, e.g., a broadcast, unicast, or multicast address). As previously indicated, although Tasman teaches accepting incoming data streams via transceiver 6 at the radio layer 10, Tasman fails to explicitly disclose assembling data units of at least one incoming data stream into an output stream. It is well known in the art that radio

Art Unit: 2616

layers (MAC/Modem Layer 10 in Fig.3b) assemble data units of incoming data streams into at least one output stream. Per Applicant's request to provide a reference disclosing this feature, the Kadambi reference is included. Kadambi teaches assembling data units of at least one incoming data stream into an output stream (col. 4, lines 38-40).

2. Applicant also argues Tasman fails to disclose the "selecting" step. However, Examiner respectfully disagrees. Tasman discloses in (*pages 4-5, paragraphs 51-53*), the routing managers 12, 13, 14 are preferably responsible for selecting an appropriate subset of this information, formatting this subset to be compatible with the forwarding layer 17, and making this subset available to the forwarding layer 17 via the forwarding layer API 22 (*page 5, paragraph 53*).

3. Applicant further contends Tasman fails to explicitly disclose "searching for a path that leads from the wireless device..." and "scheduling a transmission of the output data stream when the path is found for each of the at least one destination node..." However, Examiner respectfully disagrees. Tasman discloses these limitations on *page 5, paragraph 55* and further on *page 7, paragraph 83*; "the forwarding layer 17 consults a set of tables maintained by the unicast routing managers 13 to determine an appropriate next-hop and a radio profile structure. The forwarding layer 17 then preferably constructs a message that contains information including a message type identifier, a next-hop address, a pointer to a packet buffer to be sent, the length of the packet buffer (e.g., in bytes), a radio profile structure specifying transmission parameters for the packet and a length of the radio profile."

Art Unit: 2616

4. Therefore, Examiner's position is that all claimed limitations have been met and the rejection has been maintained.

Claim Objections

1. Claim 15 is objected to because of the following informality:
2. In claim 15, line 7, "assembly" should be replaced with "assembler".
3. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2616

6. Claims 1 – 3 and 5 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tasman et al. (US 2002/0080755 A1) in view of Kadambi et al. (US 5,812,554).

Regarding claims 1, 12 and 15, Tasman teaches an apparatus (*Fig. 2; mobile station 2*) comprising:

a traffic assembler (*Fig. 3b; radio layer 10*) for accepting incoming data streams (radio layer 10 receives streams via transceiver 6; page 4, paragraph 46), wherein the data units are destined for at least one destination node, and the output data stream comprises a service level requirement for each of the at least one destination node (*page 4, paragraph 46*);

a resource selector (*routing managers 12-14*) responsive to the traffic assembler (via link metric calculation 11) and configured to select a first set of physical radio transmission resources for the output data stream, wherein the first set of physical radio transmission resources is selected from physical radio transmission resources of one of a plurality of wireless connectivity technologies (*pages 4-5, paragraphs 51-53*) and belongs to physical radio transmission resources currently available in the apparatus (*pages 4-5, paragraphs 51-53*);

a path detector (*forwarding layer 17*), configured to detect whether a path leading to a destination node and fulfilling the corresponding service level requirement is available for each of the at least one destination node (*page 5, paragraphs 53-55*), wherein one leg of the path is implemented by the first set of transmission resources (*page 5, paragraph 55*) and wherein the path detector is operably connected to a routing entity configured to search for paths leading from

Art Unit: 2616

the apparatus to the at least one destination node(*page 5, paragraph 55, further described on page 7, paragraph 83*); and

a traffic scheduler (*queuing layer 18*), responsive to the path detector, configured to schedule a transmission of the output data stream, wherein the traffic scheduler is configured to schedule the transmission to occur through the first set of physical radio transmission resources (*page 5, paragraph 55, further described on page 7, paragraph 83*).

Although Tasman teaches accepting incoming data streams via transceiver 6 at the radio layer 10, Tasman fails to explicitly disclose assembling data units of at least one incoming data stream into an output stream.

However, it is well known in the art that radio layers (MAC/Modem Layer 10 in Fig.3b) assemble data units of incoming data streams into at least one output stream. Furthermore, Kadambi teaches assembling data units of at least one incoming data stream into an output stream (col. 4, lines 38-40).

Thus, it would have been obvious to one skilled in the art to assemble incoming data unit streams into at least one output data stream, for the purpose of arranging data to be transmitted through the network.

Regarding claim 2, Tasman teaches a method according to claim 1, further comprising determining a path comprising a highest service level of all paths leading to a destination node, wherein the determining is performed for the destination node to which no path fulfilling the corresponding service level requirement is found (*page 4, paragraph 50; page 5, paragraph 55*).

Regarding claim 3, Tasman teaches a method according to claim 2, further comprising: configuring the first set of physical radio transmission resources (page 4, paragraph 46); testing whether the determined path comprising the highest service level fulfills the service level requirement for the at least one destination node in response to the configuring step (page 4, paragraph 50); and scheduling a transmission of the output data stream when the determined path fulfills the service level requirement for the at least one destination node, wherein the scheduling presumes that the transmission is to occur through the first set of radio transmission resources, wherein the configuring step is performed when no path fulfilling the respective service level requirement is found for the at least one destination node in the searching step (page 5, paragraph 55).

Regarding claim 5, Tasman teaches a method according to claim 4, further comprising a step of configuring the physical radio transmission resources available in the wireless communication device (page 4, paragraph 46).

Regarding claim 6, Tasman teaches a method according to claim 4, further comprising a step of rearranging the data units in the output data stream (page 10, end of paragraph 105; reordering).

Regarding claim 7, Tasman teaches a method according to claim 1, wherein the searching step includes finding all paths leading from the wireless communication device to the at least one destination node (page 9, paragraph 102).

Regarding claim 8, Tasman teaches a method according to claim 7, wherein the searching step comprises performing the finding step in another network element (page 9, paragraphs 102-104).

Regarding claim 9, Tasman teaches a method according to claim 1, wherein the controlling step includes changing, prior to the transmission of the output data stream, the wireless connectivity technology that is in an active state (page 11, paragraph 121).

Regarding claim 10, Tasman teaches a method according to claim 1, wherein the selecting step comprises utilizing information about a current state of the physical radio transmission resources available in the wireless communication device (page 5, paragraph 53).

Regarding claim 11, Tasman teaches a method according to claim 1, wherein the other wireless connectivity technologies include a plurality of operation states (page 5, paragraph 55); and the controlling step includes synchronizing the plurality of operation states to maintain the service level requirement of each destination node during the transmission (page 5, paragraph 55).

Regarding claim 13, Tasman teaches a system according to claim 12, wherein the traffic assembler, the resource selector, the traffic scheduler, and the controller reside in a single wireless communication device (elements of Fig. 3b, located within mobile 2 in Fig. 2).

Regarding claim 14, Tasman teaches a system according to claim 12, wherein: the other wireless connectivity technologies include a plurality of operation states (page 5, paragraph 55); and the controller are configured to synchronize the

Art Unit: 2616

plurality of operation states to maintain the service level requirement of each destination node during the transmission (page 5, paragraph 55).

Regarding claim 16, Tasman teaches an apparatus according to claim 15, wherein the path detector comprises an interface for the routing entity, wherein the routing entity resides outside the apparatus (see Fig. 3b), and the interface is configured to receive the information about paths leading from the apparatus to the at least one destination node (page 5, paragraph 54).

Regarding claim 17, Tasman teaches an apparatus according to claim 15, wherein the apparatus comprises the routing entity, the routing entity being configured to search all paths leading from the apparatus to the destination node (page 9, paragraph 102).

Regarding claim 18, Tasman teaches apparatus according to claim 15, wherein the other wireless connectivity technologies comprise a plurality of operation states; and the controller is further configured to synchronize the plurality of operation states to maintain the service level requirement of each destination node during the transmission.

Allowable Subject Matter

7. Claims 4 and 19-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2616

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RHONDA MURPHY whose telephone number is (571)272-3185. The examiner can normally be reached on Monday - Friday 9:00 - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firmin Backer can be reached on (571) 272-6703. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Rhonda Murphy
Examiner
Art Unit 2616

/FIRMIN BACKER/
Supervisory Patent Examiner, Art Unit 2616